Addition of Phosphates on Stability of Sterilized Goat Milk in Different Seasons

Authors : Mei-Jen Lin, Yuan-Yuan Yu

Abstract : Low heat stability of goat milk limited the application of ultra-high temperature (UHT) sterilization on producing sterilized goat milk in order to keep excess goat milk in summer for producing goat dairy products in winter in Taiwan. Therefore, this study aimed to add stabilizers in goat milk to increase the heat stability for producing UHT sterilized goat milk preserved for making goat dairy products in winter. The amounts of 0.05-0.11% blend of sodium phosphates (Na) and blend of sodium/potassium phosphates (Sp) were added in raw goat milk at different seasons a night before autoclaved sterilization at 135°C 4 sec. The coagulation, ion calcium concentration and ethanol stabilizers and the addition levels. Addition of 0.05% and 0.22% of both Na and Sp salts in Spring goat milk, 0.10-0.11% of both Na and Sp salts in Summer goat milk, and 0.05%Na Sp group in Autumn goat milk were coagulated after autoclaved, respectively. There was no coagulation found with the addition of 0.08-0.09% both Na and Sp salts in goat milk; furthermore, the ionic calcium concentration were lower than 2.00 mM and ethanol stability higher than 70% in both 0.08-0.09% Na and Sp salts added goat milk. Therefore, the optimal addition level of blend of sodium phosphates and blend of sodium/potassium phosphates were 0.08-0.09% for producing sterilized goat milk at different seasons in Taiwan.

Keywords : coagulation, goat milk, phosphates, stability

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020

1